UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,344	04/14/2005	Kazushige Ohno	258047US90PCT	8363

22850 7590 04/18/2008

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER
MILLER HARRIS, AMBER R

ART UNIT	PAPER NUMBER
1797	

NOTIFICATION DATE	DELIVERY MODE
04/18/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No.	Applicant(s)	
	10/510,344	OHNO, KAZUSHIGE	
	Examiner	Art Unit	
	AMBER MILLER HARRIS	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 December 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☒ Claim(s) *2 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/27/2007, 10/24/2007 (2)*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This action is in response to the correspondence filled on 12/28/2007.

Claims 1-12 have been amended.

Claims 13 and 14 are new.

Claims 1-14 have been rejected.

Claims 1-14 have been examined and are pending.

Claim Objections

Claims 2 and 14 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 2, **includes** the range $F\alpha \times L < 30$ which is not within the range of the previous claim. The applicant has stated $F\alpha \times L \geq 30$ in claim 1, therefore claims 2 and 14 must read $30 \leq F\alpha \times L \leq 200$.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3, 6, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa et al. US 6984253 in view of Pitcher, Jr. US 4,329,162.

Regarding claim 1, the Ichikawa et al. reference discloses a honeycomb filter for purifying exhaust gases comprising: a columnar body comprising porous ceramic and having a plurality of through holes, extending in parallel with one another in a length direction of the columnar body, the columnar body having a wall portion interposed between the through holes and configured to filter particulates in exhaust gases; and a plurality of plugs filling one of the through holes at one end of the columnar body and filling one of the through holes at the other end of the columnar body (figure 4, object 1, and column 1, lines 19-32); wherein the columnar body has a bending strength Fα (MPa) , and the plurality of plugs has a length L (mm) (Table 1). The reference does not disclose the columnar body and the plurality of plugs are formed such that the bending strength Fα (MPa) and the length L (mm) are adjusted to satisfy the relationship of $F\alpha \times L \geq 30$.

The Pitcher, Jr. reference discloses the plug lengths of 9.5-13mm (column 9, lines 24-27).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Ichikawa et al. reference to include the plug lengths of 9.5-13mm and therefore a bending strength Fα (MPa) of said honeycomb filter for purifying exhaust gases and a length L (mm) of said plug in the length direction of the through hole satisfy the relationship of $F\alpha \times L \geq 30$ (Pitcher, Jr. column 9, lines 24-27) because this allows the filter to have the ability to block specific passages and therefore filter the gas.

For claim 2, the Ichikawa et al. reference discloses a bending strength Fα (MPa) of said honeycomb filter of 12 Mpa (Table 1). The reference does not disclose a bending strength Fα (MPa) and the length L (mm) satisfy the relationship of $F\alpha \times L \geq 200$.

The Pitcher, Jr. reference discloses the plug lengths of 9.5-13mm (column 9, lines 24-27).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Ichikawa et al. reference to include the plug lengths of 9.5-13mm and therefore a bending strength Fα (MPa) of said honeycomb filter for purifying exhaust gases and a length L (mm) of said plug in the length direction of the through hole satisfy the relationship of $F\alpha \times L \geq 200$ (Pitcher, Jr. column 9, lines 24-27) because this allows the filter to have the ability to block specific passages and therefore filter the gas.

For claim 3, the Ichikawa et al. reference discloses a catalyst being provided in the columnar body (column 7, lines 58-60).

For claim 6, the Ichikawa et al. reference discloses a catalyst provided in the columnar body (column 7, lines 58-60).

For claim 13, the Ichikawa et al. reference discloses the columnar body comprising a plurality of porous ceramic members and an adhesive layer comprising a sealing material joining the plurality of porous ceramic members (figure 1b, object 12 and 8).

For claim 14, the Ichikawa et al. reference discloses a bending strength Fα (MPa) of said honeycomb filter of 12 MPa (Table 1). The reference does not disclose a bending strength Fα (MPa) of said honeycomb filter for purifying exhaust gases and a length L (mm) of said plug in the length direction of the through hole satisfy the relationship of $F\alpha \times L \geq 200$.

The Pitcher, Jr. reference discloses the plug lengths of 9.5-13mm (column 9, lines 24-27).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Ichikawa et al. reference to include the plug lengths of 9.5-13mm and therefore a bending strength Fα (MPa) of said honeycomb filter for purifying exhaust gases and a length L (mm) of said plug in the length direction of the through hole satisfy the relationship of $F\alpha \times L \geq 200$ (Pitcher, Jr. column 9, lines 24-27) because this allows the filter to have the ability to block specific passages and therefore filter the gas.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa et al. US 6984253 in view of Pitcher, Jr. US 4,329,162 as applied to claim 1 above, and further in view of Shimoda et al. US 5,725,618.

For claim 4, the Ichikawa et al reference does not disclose the columnar body uses a gas flow to remove the particulates collected and accumulated in the wall portion by a back washing process.

The Shimoda et al. reference discloses the columnar body uses a gas flow to remove the particulates collected and accumulated in the wall portion by a back washing process (column 2, lines 41-52).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Ichikawa et al. reference to include the columnar body uses a gas flow to remove the particulates collected and accumulated in the wall portion by a back washing process (Shimoda et al. column 2, lines 41-52) because this prevents the particulate filter from being clogged with accumulated particulates and therefore reducing the exhaust's resistance.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa et al. US 6984253 in view of Pitcher, Jr. US 4,329,162 as applied to claim 1 above, and further in view of Merry US 5,171,341.

For claim 5, the Ichikawa et al. reference does not disclose the columnar body allows heated exhaust gases to flow and removes the particulates collected and accumulated in the wall portion by the heated gases.

The Merry reference discloses the columnar body allows heated exhaust gases to flow and removes the particulates collected and accumulated in the wall portion by the heated gases (column 9, lines 1-5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Ichikawa et al. reference to include the columnar body allows heated exhaust gases to flow and removes the particulates collected and accumulated in the wall portion by the heated gases (Merry, column 9, lines 1-5) because this prevents the particulate filter from being clogged with accumulated particulates and therefore reducing the exhaust's resistance.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa et al. US 6984253 in view of Pitcher, Jr. US 4,329,162 as applied to claim 2 above, and further in view of Shimoda et al. US 5,725,618.

For claim 7, the Ichikawa et al reference does not disclose the columnar body uses a gas flow to remove the particulates collected and accumulated in the wall portion by a back washing process.

The Shimoda et al. reference discloses the columnar body uses a gas flow to remove the particulates collected and accumulated in the wall portion by a back washing process (column 2, lines 41-52).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Ichikawa et al. reference to include the columnar body uses a gas flow to remove the particulates collected and accumulated in the wall portion by a back washing process (Shimoda et al. column 2, lines 41-52)

because this prevents the particulate filter from being clogged with accumulated particulates and therefore reducing the exhaust's resistance.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa et al. US 6984253 in view of Pitcher, Jr. US 4,329,162 as applied to claim 3 above, and further in view of Shimoda et al. US 5,725,618.

For claim 8, the Ichikawa et al reference does not disclose the columnar body uses a gas flow to remove the particulates collected and accumulated in the wall portion by a back washing process.

The Shimoda et al. reference discloses the columnar body uses a gas flow to remove the particulates collected and accumulated in the wall portion by a back washing process (column 2, lines 41-52).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Ichikawa et al. reference to include the columnar body uses a gas flow to remove the particulates collected and accumulated in the wall portion by a back washing process (Shimoda et al. column 2, lines 41-52) because this prevents the particulate filter from being clogged with accumulated particulates and therefore reducing the exhaust's resistance.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa et al. US 6984253 in view of Pitcher, Jr. US 4,329,162 as applied to claim 6 above, and further in view of Shimoda et al. US 5,725,618.

For claim 9, the Ichikawa et al reference does not disclose the columnar body uses a gas flow to remove the particulates collected and accumulated in the wall portion by a back washing process.

The Shimoda et al. reference discloses the columnar body uses a gas flow to remove the particulates collected and accumulated in the wall portion by a back washing process (column 2, lines 41-52).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Ichikawa et al. reference to include the columnar body uses a gas flow to remove the particulates collected and accumulated in the wall portion by a back washing process (Shimoda et al. column 2, lines 41-52) because this prevents the particulate filter from being clogged with accumulated particulates and therefore reducing the exhaust's resistance.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa et al. US 6984253 in view of Pitcher, Jr. US 4,329,162 as applied to claim 2 above, and further in view of Merry US 5,171,341.

For claim 10, the Ichikawa et al. reference does not disclose the columnar body allows heated exhaust gases to flow and removes the particulates collected and accumulated in the wall portion by the heated exhaust gases.

The Merry reference discloses the columnar body allows heated exhaust gases to flow and removes the particulates collected and accumulated in the wall portion by the heated exhaust gases (column 9, lines 1-5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Ichikawa et al. reference to include the columnar body allows heated exhaust gases to flow and removes the particulates collected and accumulated in the wall portion by the heated exhaust gases (Merry, column 9, lines 1-5) because this prevents the particulate filter from being clogged with accumulated particulates and therefore reducing the exhaust's resistance.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa et al. US 6984253 in view of Pitcher, Jr. US 4,329,162 as applied to claim 3 above, and further in view of Merry US 5,171,341.

For claim 11, the Ichikawa et al. reference does not disclose the columnar body allows heated exhaust gases to flow and removes the particulates collected and accumulated in the wall portion by the heated exhaust gases

The Merry reference discloses the columnar body allows heated exhaust gases to flow and removes the particulates collected and accumulated in the wall portion by the heated exhaust gases (column 9, lines 1-5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Ichikawa et al. reference to include the columnar body allows heated exhaust gases to flow and removes the particulates collected and accumulated in the wall portion by the heated exhaust gases (Merry, column 9, lines 1-5) because this prevents the particulate filter from being clogged with accumulated particulates and therefore reducing the exhaust's resistance.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa et al. US 6984253 in view of Pitcher, Jr. US 4,329,162 as applied to claim 6 above, and further in view of Merry US 5,171,341.

For claim 12, the Ichikawa et al. reference does not disclose the columnar body allows heated exhaust gases to flow and removes the particulates collected and accumulated in the wall portion by the heated exhaust gases.

The Merry reference discloses the columnar body allows heated exhaust gases to flow and removes the particulates collected and accumulated in the wall portion by the heated exhaust gases (column 9, lines 1-5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Ichikawa et al. reference to include the columnar body allows heated exhaust gases to flow and removes the particulates collected and accumulated in the wall portion by the heated exhaust gases (Merry, column 9, lines 1-5) because this prevents the particulate filter from being clogged with accumulated particulates and therefore reducing the exhaust's resistance.

Response to Arguments

1. Applicant's arguments filed 12/28/2007 have been fully considered but they are not persuasive.

2. Applicant contends that for claims 1 and 2, that neither Ichikawa et al. nor Pitcher, Jr. teaches or suggests "a columnar body ...; and a plurality of plugs ..., wherein *... the columnar body and the plurality of plugs are formed such that the bending*

strength Fα (MPa) and the length L (mm) are adjusted to satisfy the relationship of Fα x L ≥ 30" as recited in amended Claim 1 and *"the bending strength Fα (MPa) and the length L (mm) satisfy the relationship of Fα x L ≤ 200"* as recited in Claim 2.

3. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Ichikawa et al. reference to include the plug lengths of 9.5-13mm and therefore a bending strength Fα (MPa) of said honeycomb filter for purifying exhaust gases and a length L (mm) of said plug in the length direction of the through hole satisfy the relationship of Fα × L ≥ 30 (Pitcher, Jr. column 9, lines 24-27) because this common length of the plugs allow the filter to have the ability to block specific passages and therefore filter the gas and plugs of this length would satisfy the relationship of Fα × L ≥ 30. For further clarity, the Ichikawa et al. reference discloses that the fluctuation of different parameters is used to reduce cracking within the filter. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have optimized the bending strength and relate it to the common length of the plugs for the relationship of Fα × L ≥ 30 since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMBER MILLER HARRIS whose telephone number is (571)270-3149. The examiner can normally be reached on Mon-Thur (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on (571) 272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AH

/Walter D. Griffin/
Supervisory Patent Examiner, Art Unit 1797